

REMARKS

Claims 1 - 18 are pending. By this Amendment, no claims are cancelled, claims 1 and 2 are amended and no new claims are added.

**Claim Rejections – 35 U.S.C. §§ 102/103**

The September 16, 2009 Office Action rejected claims 1-4, 6-7 and 9-10 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent 5,487,819 to Everett. Remaining dependent claims 5, 8 and 11-18 were also rejected under 35 U.S.C. 103(a) as being unpatentable over Everett alone, or in combination with another reference. Applicants respectfully traverse the rejections.

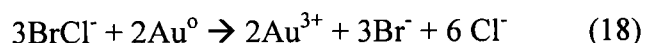
The cited references, individually or in combination, do not disclose, teach or suggest all of the features included in independent claims 1 and 2. Independent claims 1 and 2 recite “preparing an acidic aqueous halide solution comprising *a mixture of halides* that has an oxidation potential sufficient to oxidize the sulfidic material.” The Office Action erroneously concludes that Everett discloses a mixture of halides by erroneously equating a mixture with a compound or complex. As described in general chemistry textbooks, a chemical compound (complex) (i) consists of atoms of two or more different elements bound together, (ii) can be broken down in to a simpler type of matter (elements) by chemical means but not by physical means, (iii) has properties that differ from its component elements, and (iv) always contains the same ratio of its component atoms. This is fundamentally different from a mixture, which (i) consists of two or more elements and/or compounds physically intermingled, (ii) can be separated into its components by physical means, and (iii) often retains many of the properties of its components. As such, one of ordinary skill in the art will appreciate that *compounds* and

*complexes* differ from *mixtures* in that mixtures are formed simply by blending two or more substances together in some random proportion without chemically changing the individual substances in the mixture.

Applicants respectfully submit that Everett describes the electrolytic formation of a halide complex, which is a chemical compound. Specifically, the active agent in Everett is called Halex, which Everett also refers to as a compound. (See, e.g., Col. 10, line 23.) This chemical compound is comprised of bromine and chlorine atoms chemically joined together, with a chemical formula  $\text{BrCl}_2^-$ . This compound is a negatively charged ion, and forms an electrostatic bond with cations such as sodium to form the neutrally charged species  $\text{NaBrCl}_2$ . The key chemical behavior of Halex is to act as an oxidant when in contact with sulphides. The leaching process of Everett is summarized as follows:



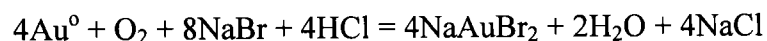
In Everett, the gold metal is oxidized by Halex to form the gold ( $1^+$ ) cation which is stabilized in solution by forming the sodium gold bromide complex. Also, in Column 10, lines 20-23, Everett states “[t]he halex **compounds** invoke the leaching of difficult to leach mineral sulphides (see e.g. equation (17)) and also difficult to leach gold (see e.g. equation (18)).” Equation (18) of Everett is provided below:



In equation (18), it is evident that the chemical formula  $3\text{BrCl}_2^-$  is referring to the Halex **compound** to invoke the leaching of gold. (Col. 14, line 29.)

Conversely, the present application teaches that sodium bromide and sodium chloride form a chemical **mixture** which does not have any inherent oxidant characteristics. Rather, this

mixture is able to form stable metal-halide complexes on account of solubilities and complexation, rather than chemical oxidation. In the present application, the oxidation potential to oxidize the sulphides can be achieved, for example, by the introduction of oxygen into the slurry. An example of a chemical leaching process for the present application is as follows:



In the above-example, gold metal can be oxidized by oxygen to form the gold ( $1^+$ ) cation, which is stabilized in solution by forming the sodium gold bromide complex.

As illustrated by the foregoing, the halide compound of Everett is fundamentally different from the acidic aqueous halide solution comprising a mixture of halides as claimed in the present invention. Also, the mechanism of leaching described in Everett using the halex compound is fundamentally different from the mechanism of the acidic aqueous halide solution comprising a mixture of halides as claimed in the present invention. As a result, Everett not only fails to teach, disclose or suggest an acidic aqueous halide solution comprising a mixture of halides as claimed in the present invention, but actually teaches away from this claim limitation of the present invention. Neither Swinkels nor Adams cure this deficiency as neither reference discloses an acidic aqueous halide solution comprising a mixture of halides. Applicants also respectfully note that U.S. Patent No. 5,620,585 to Dadgar et al., concurrently submitted herein, also does not disclose, teach or suggest an acidic aqueous halide solution comprising a mixture of halides. Instead, Dadgar is directed to the use of molecular bromine ( $\text{Br}_2$ ) as a leachant, which may be converted from bromated ions prior to leaching. As a result, Dadgar also teaches away from the presently claimed inventions.

Therefore, since the cited references, individually or in combination, do not teach, disclose or suggest all of the features of the independent claims, but instead teach away from the claimed invention, a *prima facie* case of obviousness has not been established, and reconsideration and withdrawal of the rejection to independent claims 1 and 2 is respectfully requested. With respect to specific features of claims 2-18 depending from independent claims 1 and 2, these are not commented on further with respect to the patentability of the dependent claims, as they are presently moot given the above analysis, although Applicants do not acquiesce in the Examiner's position, and Applicants reserve the right to raise additional arguments with respect to the patentability of such claims. As all remaining pending claims depend directly or indirectly from independent claims 1 and/or 2, Applicants respectfully request that the rejections under 35 U.S.C. §§ 102 and 103 be withdrawn. Also, because the cited references do not teach all of the features of independent claims 1 and 2, Applicants do not comment further here on the suitability of combining or modifying the cited references as applied to the pending dependent claims. Accordingly, Applicants respectfully request withdrawal of the rejection to claims 1-18.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Application No. 10/541,149

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'B. Stender', enclosed within a large, loopy circular flourish.

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